ABSTRACT OF THE DISCLOSURE

The present invention relates to a one-part room temperature vulcanizable organopolysiloxane rubber composition which crosslinks in the presence of moisture to form a high gloss coating with minimal shrinkage for surfaces. The one-part organopolysiloxane rubber composition consists essentially of the product which is obtained by mixing the following:

a) from about 20 to about 60 weight percent of one or more polydiorganosiloxane fluids of the formula

$$HO[(R)_2SiO]_n(R)_2SiOH$$

in which R is a monovalent alkyl or alkylene radical having 1 to 8 carbon atoms or a phenyl radical, and n has an average value such that the viscosity is from about 10 to about 20,000 centipoise at 25°C;

b) from 0 to about 8 weight percent of a bifunctional chain extender of the general formula

$$R^4{}_2\text{-Si-}X_2$$

where X is alkoxy or ketoximino and R4 is a monovalent alkyl or alkylene radical having 1 to 8 carbon atoms or a phenyl radical;

c) from 0 to about 50 weight percent of an inorganic extending or non-reinforcing filler;

d) from about 0.5 to about 20 weight percent of an amorphous SiO_2 reinforcing filler having a surface area of between about 50 to 250 m^2/g

and a particle size range between about 0.01 and 0.03 microns;

e) from about 3 to about 15 weight percent of one or more crosslinking agents of general formula

$$(X)_{4-m}\text{-Si-}R'_m$$

where R′ is an alkyl, alkylene or phenyl radical (preferably methyl or ethyl), X is an alkyl radical with a functional group selected from carboxyl, ketoximino, alkoxy, carbonyl or amine linked directly to the silicone atom, and m is an integer of from 0 to 2;

f) from about 0.2 to about 3 weight percent of an adhesion promoter of the formula

$$\begin{array}{c} R^3_b \\ (R^2O)_{3-b}\,SiR^1 \end{array}$$

in which R^2 and R^3 are independently selected from monovalent alkyl or alkylene radicals having 1 to 8 carbon atoms or a phenyl radical which may optionally be substituted with an alkyl radical having 1 to 8 carbon atoms, b is an integer between 0 and 3, and R^1 is a saturated, unsaturated or aromatic hydrocarbon radical having 1 to 10 carbon atoms which may optionally contain a functional group; and

g) from about 0.02 to about 3 weight percent of an organotin salt as a condensation catalyst.